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Varietal Description of Vanguard Spring Canola

Origin and breeding

Vanguard, tested as SV02404, was developed by Svalof AB, Svalov, Sweden, from the cross Andor x SV02215. A single F3 plant served as the parent of Vanguard. Selection criteria were improved grain yield and quality, disease tolerance and early maturity. Vanguard was originally registered for sale in Eastern Canada only.

Varietal characteristics

Plant characteristics

Leaves: medium lobing; more pointed tip than leaves of Global
Siliques: more anthocyanin in siliques than those of Topas
Height: slightly taller than Westar; approximately 99 to 102 cm
Maturity: 1 to 2 days later than Westar
Disease reaction: similar or slightly better resistance to blackleg *Leptosphaeria maculans* than Westar; better resistance to root rot *Rhizoctonia solani* than Westar; similar to Westar in white rust reaction *Albugo candida*.

Seed characteristics

Color: black
Seed weight: 3.0 g/1000 seeds; less than Westar
Oil content: higher than Westar in Eastern Canada, similar to Westar in Western Canada
Protein content: similar to Westar
Glucosinolate content: less than Westar
Erucic acid content: less than 0.6%
Green seed: similar to Westar
Chlorophyll content: similar to Westar

Identification

Vanguard can be distinguished from Celebra on the basis of differences in zymogram patterns of glucose phosphate isomerase when tested using starch gel electrophoresis.

Performance

Vanguard is a canola variety with acceptable yield, improved protein levels, moderately lower oil levels, and satisfactory erucic acid and glucosinolate levels.

Maintenance of breeder seed

Svalof AB, Svalov, Sweden

Canadian Distributor

Bonis and Company Ltd.

Recommended by

Ontario Oil and Protein Seed Crops Committee

Supported by

Eastern Expert Committee on Cereals and Oilseeds and the Western Canada Rapeseed/Canola Registration Recommending Committee

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Table 1. Performance of Vanguard and check varieties, Ontario oil and protein seed crops committee*

Variety	Yield (kg/ha)	Days to Maturity	Lodging** (1-5)	Plant Height (cm)	1000 Sd. wt. (g)	Green Seed (%)	Erucic Acid (%)	Glucosinolates (µm/g)	Oil (%)	Protein (%)
Vanguard	2232	100	1.8	114	2.9	1.2	0.10	6.5	43.5	23.2
Topas	2154	101	1.2	118	2.8	1.9	0.13	11.8	43.7	23.4
Westar	2159	99	1.8	112	3.3	1.0	0.13	8.2	42.8	23.2
Hanna	2314	103	1.8	126	2.7	2.1	0.06	14.9	43.0	23.0
Check Mean	2209	101	1.6	119	2.9	1.7	0.11	11.6	43.2	23.2

*Locations: 1985: Elora, Dundalk, Midhurst, Ottawa, Inkerman 1987: Elora, Dundalk, Centralia, New Liskeard, Ottawa

** 1-5; 1 = no lodging, 5 = flat

Table 2. Performance of Vanguard and check varieties, Eastern co-operative spring canola trials, 1985 and 1987

Variety	Yield (kg/ha)	Days to Maturity	Lodging** (1-5)	Plant Height (cm)	1000 Sd. wt. (g)	Green Seed (%)	Erucic Acid (%)	Glucosinolates (µm/g)	Oil (%)	Protein (%)
Vanguard	2273	100	1.8	111	3.0	1.2	0.10	6.4	43.7	22.9
Topas	2163	101	1.3	115	2.8	2.4	0.15	11.8	44.0	23.2
Westar	2158	98	1.8	110	3.4	1.2	0.14	8.4	42.9	23.0
Hanna	2325	103	1.8	122	2.8	2.9	0.07	15.0	43.2	22.9
Check Mean	2215	101	1.6	116	3.0	2.2	0.12	11.7	43.4	23.0

* Locations: Truro, N.S.; St. Jean, Quebec; Ripley, Ailsa Craig, Delhi, Ridgetown, Brussels, Ontario

** 1 - 5; 1 = no lodging, 5 = flat

Table 3. Performance of Vanguard and Westar, Western co-operative canola trials 1986-1988

	Maturity Zone	Variety	Yield (kg/ha)	Oil (%)	Protein (%)	Chlorophyll (%)
1986	Medium	Vanguard	2300	44.0	45.6	–
		Westar	2210	45.0	44.3	–
	Long	Vanguard	2460	44.2	48.2	–
		Westar	2320	44.5	46.9	–
	Irrigated	Vanguard	4180	42.2	–	–
		Westar	4040	42.9	–	–
1987	Medium	Vanguard	2790	43.7	48.8	46.8
		Westar	2810	44.5	48.2	38.9
	Long	Vanguard	2130	41.0	49.4	17.3
		Westar	2190	41.5	48.2	21.2
	Irrigated	Vanguard	3220	42.7	–	–
		Westar	2830	42.8	–	–
1988	Medium	Vanguard	2110	44.9	48.3	17.0
		Westar	2100	44.8	45.5	20.0
	Long	Vanguard	2550	42.0	45.6	12.0
		Westar	2830	43.5	46.0	12.0
	Irrigated	Vanguard	3190	43.6	46.0	12.0
		Westar	3380	44.9	45.2	15.0

Medium zone: (1986-88) Ellerslie, Indian Head, Kelsey, Lashburn, Meath Park, Melfort, Scott, (1986-87) Carrot River, Delacour, Lacombe, Regina, Saskatoon, Somme, Watrous; (1986 only) Glaslyn; (1987 only) Olds; (1988 only) Ituna, Swan River.

Long zone: (1986-88) Portage La Prairie, (1986-87) Brandon, Carman, Morden, Winnipeg; (1986) Altona, Lethbridge (dry), (1987) Miami, (1988) Rosebank

Irrigated zone: Lethbridge (1986-88) and Outlook (1987-88)

Table 4. Disease reactions of Vanguard and Westar, Western co-operative rapeseed test, 1987

Location	Disease	Vanguard	Westar
Saskatoon	Blackleg**	22.16	32.30
Elgin	Blackleg*	1.80	4.10
Winnipeg	Root rot*	1.52	1.80
Winnipeg	White rust **	6.11	6.11

* Scale 0 - 5; 0 = resistant, 5 = very susceptible

** Scale 0 - 100; 0 = resistant, 100 = very susceptible

Table 5. Disease reactions of Vanguard and check varieties, Western co-operative rapeseed test A, 1988

	Blackleg		Root Rot	White rust*	
	Souris	Saskatoon	Winnipeg	Winnipeg	Saskatoon
Variety	(0-5)	(0-100)	(0-5)	(0-9)	(%)
Vanguard	2.57	16.94	0.69	0.03	0.00
Westar	2.92	34.47	1.10	0.05	0.00
Regent	2.15	34.17	0.70	0.03	0.00
Tribute	2.10	44.03	0.66	0.00	0.00
Global	1.34	3.75	0.35	0.05	0.00

* 0 = no disease

* race 7

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